

SECTION II—CLAIMS

1.-35. (Canceled)

36. (New) An apparatus, comprising:

a light emitter to emit a light signal, the light emitter comprising a uniform intensity generator having an input port optically coupled to receive the light signal and an output port to emit the light signal, wherein the uniform intensity generator is configured to emit the light signal with a uniform intensity distribution and comprises a transmitter having a first diffractive optical element and a second diffractive optical element, the first diffractive optical element to convert an input light signal having a non-uniform intensity distribution to an output light signal having a uniform intensity distribution, the second diffractive optical element to correct a phase distortion in the output light signal output from the first diffractive optical element; and

a refractive lens assembly configured to receive the light signal emitted from the light emitter and to refract the light signal to a remote location facing the refractive lens assembly.

37. (New) The apparatus of claim 36, further comprising:

a support frame; and

a mounting element to adjustably mount the light emitter to the support frame.

38. (New) The apparatus of claim 37 wherein the light emitter comprises an optic fiber tip.

39. (New) The apparatus of claim 38 wherein the support frame is curved to allow the optic fiber tip to be positioned adjacent to a focal plane of the refractive lens assembly.

40. (New) The apparatus of claim 39 wherein the refractive lens assembly comprises a fisheye lens assembly.

41. (New) The apparatus of claim 37 wherein the mounting element comprises a fiber positioner adjustable about a plurality of axes.

42. (New) The apparatus of claim 41 wherein the fiber positioner is adjustable about five axes.

43. (New) The apparatus of claim 38, further comprising a plurality of optic fiber tips each configured to direct their emitted light signal towards the refractive lens assembly.
44. (New) The apparatus of claim 36 wherein the refractive lens assembly is further capable to receive light sent from a remote location and to direct this received light towards the light emitter, the light emitter further capable to receive this directed light.
45. (New) The apparatus of claim 44 further comprising an optical receiver coupled to the light emitter, the optical receiver capable to receive the light sent from the remote location.
46. (New) An apparatus, comprising:
- a light emitter to emit a light signal, the light emitter comprising a uniform intensity generator having an input port optically coupled to receive the light signal and an output port to emit the light signal, wherein the uniform intensity generator is configured to emit the light signal with a uniform intensity distribution and comprises a transmitter having a first diffractive optical element and a second diffractive optical element, the first diffractive optical element to convert an input light signal having a non-uniform intensity distribution to an output light signal having a uniform intensity distribution, the second diffractive optical element to correct a phase distortion in the output light signal output from the first diffractive optical element;
 - a refractive lens assembly configured to receive the light signal emitted from the light emitter and to refract the light signal to a remote location facing the refractive lens assembly; and
 - a plurality of transmitters to emit a corresponding plurality of light signals to be received by the refractive lens assembly.
47. (New) The apparatus of claim 46, further comprising:
- a support frame; and
 - a mounting element to adjustably mount the light emitter to the support frame.
48. (New) The apparatus of claim 47 wherein the light emitter comprises an optic fiber tip.

49. (New) The apparatus of claim 48 wherein the support frame is curved to allow the optic fiber tip to be positioned adjacent to a focal plane of the refractive lens assembly.
50. (New) The apparatus of claim 49 wherein the refractive lens assembly comprises a fisheye lens assembly.
51. (New) The apparatus of claim 47 wherein the mounting element comprises a fiber positioner adjustable about a plurality of axes.
52. (New) The apparatus of claim 51 wherein the fiber positioner is adjustable about five axes.
53. (New) The apparatus of claim 48, further comprising a plurality of optic fiber tips each configured to direct their emitted light signal towards the refractive lens assembly.
54. (New) The apparatus of claim 46 wherein the refractive lens assembly is further capable to receive light sent from a remote location and to direct this received light towards the light emitter, the light emitter further capable to receive this directed light.
55. (New) The apparatus of claim 54 further comprising an optical receiver coupled to the light emitter, the optical receiver capable to receive the light sent from the remote location.